



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,774	11/20/2003	Robert D. Mikkola	51853	8386

7590 09/22/2005

EDWARDS & ANGELL, LLP  
P.O. Box 9169  
Boston, MA 02209

EXAMINER
----------

BIRENBAUM, NIRA S

ART UNIT	PAPER NUMBER
----------	--------------

1742

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/717,774

Applicant(s)

MIKKOLA ET AL.

Examiner

Nira S. Birenbaum, Ph.D.

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 9-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-18 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                                 |                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                            | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10-28-2004</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Election/Restrictions*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-8, drawn to a composition, classified in class 205, subclass 296.
- II. Claims 9-18, drawn to a method, classified in class 205, subclass 80.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as composition and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the composition as claimed can be practiced with another materially different product or (2) the composition as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the composition of claim 1 could be used in a different process such as electroless plating.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with S. Matthew Cairns on September 6, 2005 a provisional election was made with traverse to prosecute the invention of I, claims 1-8. Affirmation of this election must be made by applicant in replying to this Office action. Claim 9-18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Art Unit: 1742

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Claim Interpretations***

The examiner would like to clarify her interpretation of claim 3. While the claim language recites "a random copolymer" the formula presented in the claim appears to be that of a block copolymer. However, since the specification expressly defines the random copolymer to have the claimed structure, the examiner shall interpret claim 3 to read on random copolymers and not on block copolymers.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Gandikota *et al.* (US 2002/0112964).

Art Unit: 1742

Regarding claim 1, Gandikota *et al.* teach a composition comprising copper ions (paragraph 18), an electrolyte (although this is not expressly recited, it is inherent to the plating composition) and a poly(alkylene oxide) random copolymer (paragraph 20).

Regarding claims 2 and 3, Gandikota *et al.* teach that the polymer is a random copolymer of ethylene oxide and propylene oxide (paragraph 20).

Regarding claims 6 and 7, Gandikota *et al.* teach that the composition also comprises brighteners and levelers (paragraph 20). Note that the reference refers to the brighteners as “accelerators” and that these terms are synonymous in the art.

Regarding claim 8, Gandikota *et al.* teach that the electrolyte is acidic (paragraph 19).

Claim 4 is rejected under 35 U.S.C. 102(e) as being anticipated by Gandikota *et al.* as evidenced by Rosen (*Fundamental Principles of Polymeric Materials* 2<sup>nd</sup> Ed., John Wiley & Sons, 1993: pp. 15-17).

Gandikota *et al.* teach the features as previously described, but this reference does not expressly teach that the polymer is a either linear copolymer or a star copolymer. However, Rosen teaches that a polymer built exclusively from difunctional monomers (such as ethylene oxide and propylene oxide) is defined as a linear polymer. Rosen also teaches that random copolymers are a subset of linear polymers (see pgs. 16-17). Therefore, the random copolymer of ethylene oxide and propylene oxide taught by Gandikota would inherently be linear.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gandikota *et al.* in view of Egli *et al.* (US 2002/0153260).

Gandikota teaches the features as previously described. However, this reference does not teach that the polymer has a molecular weight of 500 to 20,000. Egli teaches a plating composition which uses ethylene oxide/propylene oxide random copolymers as suppressors. The polymers have an average molecular weight from about 500 to about 20,000, which is within the claimed range (paragraph 47). It would have been obvious to one of ordinary skill in the art to use ethylene oxide/propylene oxide random copolymers having a molecular weight in the range taught by Egli *et al.* in the composition of Gandikota *et al.*, because Egli *et al.* teach that polymers of this molecular weight range make suitable suppressors in plating baths (paragraph 47).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nira S. Birenbaum, Ph.D. whose telephone number is (571) 272-8516. The examiner can normally be reached on M-F 8:00 am - 4:30 pm.

Art Unit: 1742

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

nsb

ROY KING   
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700